Python: Beyond the Basics

Welcome

I'm your host, Aaron Maxwell.

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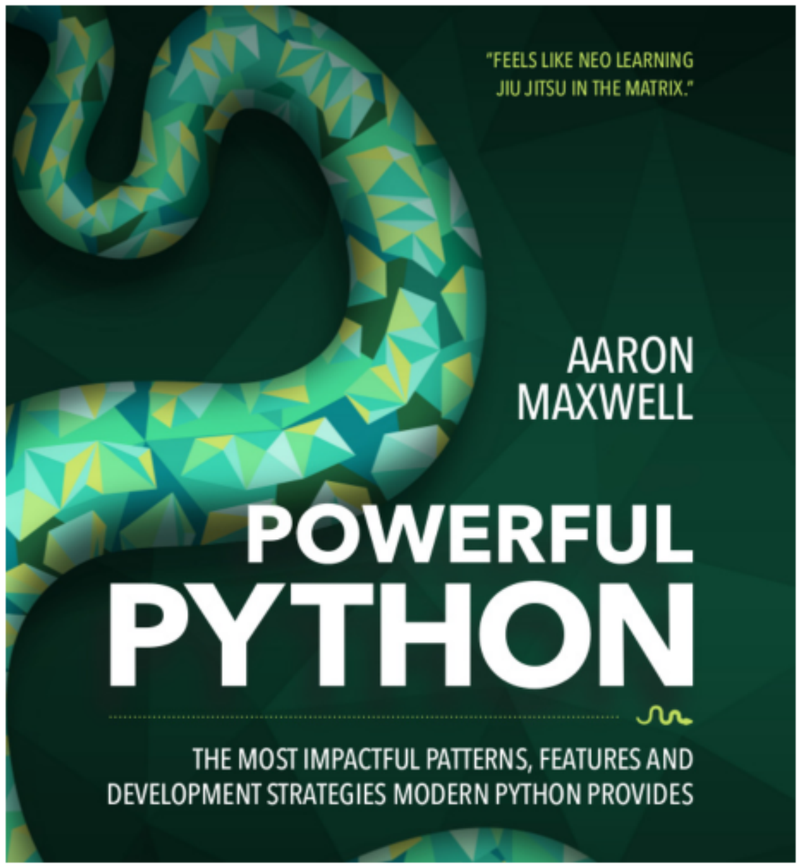

Our focus in this class: **Responsive, Scalable, and Maintainable Code Patterns.** Fully participating will **magnify your ability** to expressively write **powerfully effective** Python code.

Broad Itinerary

Today:

- Generators for scalable, responsive code
- Generator Design Patterns for Scalable Composability
- Understanding iterators, and Python's iterator protocol
- List comprehensions for rich, expressive data structures
- And... Homework!

Broad Itinerary

Tomorrow:

- Comprehensions Part 2, and how they relate to Generators
- Quick review of Python's object syntax (~ 15 minutes)
- Properties For Clean Design and Refactoring
- Object design patterns
- And... More homework!

How we will proceed

Download courseware ZIP:
https://powerfulpython.com/courseware-btb.zip

What's included:

- PDF course book
- Slides
- README.txt with pointers
- Labs (i.e., programming exercises - more on that later)

Give you a break every hour (10 minutes).

Give me a thumbs up. (Let's try it now)

Ask questions anytime.

Python versions

Most code I show you will run in both Python 2 and 3.

Where it's different, I'll code in Python 3, and point out the differences. (There won't be many.)

You can do the programming exercises in either 3, or 2.7.

What makes perfect?

Practice, practice, practice.

- Practice syntax (typing things in)
- Practice programming (higher-level labs)

I expect you to do your part!

You **exponentially** get out of this what you put into it.

Running the labs

Labs are the main programming exercises. You are given a failing automated test; your job is to write Python code to make it pass.

Simply run it as a Python program, any way you like. (For example, "python3 helloworld.py")

Run unmodified first, so you can see the failure report.

When done, click the thumb's up, and find someone to high-five.

Then: Move on to the extra credit.

I will usually NOT give you enough time to finish in class. But I expect you to **go for it**, and complete as much as you can.

Lab: helloworld.py

Let's do our first lab now: 'helloworld.py`

- In `labs/py3` for Python 3.x, or `labs/py2` for 2.7

When you finish:

- Thumbs up, so I know you're done.
- Find someone to high five.
- Proceed to `helloworld_extra.py`

Getting the most

We'll take some class time for each lab. You may not finish, but it's **critically important** that you at least start when I tell you to.

After we're done for the day, find time to finish all the main labs before tomorrow.

Solutions are provided. Use them wisely, not foolishly:

- After you get the lab passing, compare your code to the official solution.
- Other than that, don't look at them if you can avoid it.
- The more work you can do on your own, the more you will learn. Peek at the solution to get a hint when you really need it.

Optional (**only** for future master Pythonistas): Do all the extra labs as well, as soon as you can manage.